

OHS04690

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SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION  
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MDL INFORMATION SYSTEMS, INC.  
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EMERGENCY TELEPHONE NUMBER:  
1-800-424-9300 (NORTH AMERICA)  
1-703-527-3887 (INTERNATIONAL)

SUBSTANCE: CHLOROACETIC ACID

## TRADE NAMES/SYNONYMS:

ACETIC ACID, CHLORO-; CHLORACETIC ACID; MCAA; CHLOROETHANOIC ACID; MCA;  
MONOCHLORACETIC ACID; MONOCHLOROETHANOIC ACID; UN 1751; STCC 4931416;  
C2H3ClO2; OHS04690; RTECS AF8575000

CHEMICAL FAMILY: acid halides, carboxylic, aliphatic

CREATION DATE: Nov 30 1984

REVISION DATE: Dec 11 2001

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SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS  
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COMPONENT: CHLOROACETIC ACID  
CAS NUMBER: 79-11-8  
EC NUMBER (EINECS): 201-178-4  
EC INDEX NUMBER: 607-003-00-1  
PERCENTAGE: 100.0

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SECTION 3 HAZARDS IDENTIFICATION  
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NFPA RATINGS (SCALE 0-4): HEALTH=4 FIRE=1 REACTIVITY=0

## EMERGENCY OVERVIEW:

CHANGE IN APPEARANCE: deliquescent

COLOR: colorless, white or brown

PHYSICAL FORM: crystals

ODOR: vinegar odor

MAJOR HEALTH HAZARDS: potentially fatal if inhaled or on contact with the  
skin, harmful if swallowed, respiratory tract burns, skin burns, eye burns,  
mucous membrane burns

PHYSICAL HAZARDS: Dust/air mixtures may ignite or explode.

## POTENTIAL HEALTH EFFECTS:

## INHALATION:

SHORT TERM EXPOSURE: burns, death

LONG TERM EXPOSURE: same as effects reported in short term exposure

## SKIN CONTACT:

SHORT TERM EXPOSURE: burns, death

LONG TERM EXPOSURE: same as effects reported in short term exposure

## EYE CONTACT:

SHORT TERM EXPOSURE: burns

LONG TERM EXPOSURE: same as effects reported in short term exposure

## INGESTION:

SHORT TERM EXPOSURE: burns

LONG TERM EXPOSURE: same as effects reported in short term exposure

## CARCINOGEN STATUS:

OSHA: No

NTP: No

IARC: No

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SECTION 4 FIRST AID MEASURES  
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INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing and shoes before reuse. Destroy contaminated shoes.

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. Give large amounts of water or milk. Allow vomiting to occur. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

NOTE TO PHYSICIAN: For inhalation, consider oxygen. Avoid gastric lavage or emesis.

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SECTION 5 FIRE FIGHTING MEASURES  
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FIRE AND EXPLOSION HAZARDS: Slight fire hazard. Dust/air mixtures may ignite or explode.

EXTINGUISHING MEDIA: regular dry chemical, carbon dioxide, water, regular foam

Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Use extinguishing agents appropriate for surrounding fire. Flood with fine water spray. Cool containers with water spray until well after the fire is out. Reduce vapors with water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

FLASH POINT: 259 F (126 C) (CC)

LOWER FLAMMABLE LIMIT: 8%

AUTOIGNITION: >932 F (>500 C)

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## SECTION 6 ACCIDENTAL RELEASE MEASURES

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### OCCUPATIONAL RELEASE:

Do not touch spilled material. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

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## SECTION 7 HANDLING AND STORAGE

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STORAGE: Store and handle in accordance with all current regulations and standards. Store in a cool, dry place. Store in a tightly closed container. Store in a cool, dry place. Store in a well-ventilated area. Keep separated from incompatible substances. Notify State Emergency Response Commission for storage or use at amounts greater than or equal to the TPQ (U.S. EPA SARA Section 302). SARA Section 303 requires facilities storing a material with a TPQ to participate in local emergency response planning (U.S. EPA 40 CFR 355.30).

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SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

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EXPOSURE LIMITS:

CHLOROACETIC ACID:

- 4 mg/m<sup>3</sup> (1 ml/m<sup>3</sup>) AGS MAK 1 times/shift (skin)
- 0.3 ppm AIHA recommended TWA (skin)
- 1 ppm AIHA recommended STEL 15 minute(s) (skin)
- 0.3 ppm (1.2 mg/m<sup>3</sup>) UK OES TWA (skin)

VENTILATION: Provide local exhaust or process enclosure ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Any self-contained breathing apparatus with a full facepiece.

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SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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PHYSICAL STATE: solid

COLOR: colorless, white or brown

CHANGE IN APPEARANCE: deliquescent

PHYSICAL FORM: crystals

ODOR: vinegar odor

MOLECULAR WEIGHT: 94.50

MOLECULAR FORMULA: CL-C-H<sub>2</sub>-C-O-O-H

BOILING POINT: 365-376 F (185-191 C)  
MELTING POINT: 122-147 F (50-64 C)  
VAPOR PRESSURE: 0.75 mmHg @ 20 C  
VAPOR DENSITY (air=1): 3.26  
SPECIFIC GRAVITY (water=1): 1.37-1.580  
WATER SOLUBILITY: 421%  
PH: 1.93 (0.1 M solution)  
VOLATILITY: Not applicable  
ODOR THRESHOLD: Not available  
EVAPORATION RATE: 1 (butyl acetate=1)  
VISCOSITY: 2.16 cP @ 70 C  
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available  
SOLVENT SOLUBILITY:  
Soluble: acetone, alcohol, benzene, carbon disulfide, carbon tetrachloride,  
chloroform, ethanol, ether, methanol

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SECTION 10 STABILITY AND REACTIVITY

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REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition.  
May ignite or explode on contact with combustible materials.

INCOMPATIBILITIES: combustible materials, bases, metals, amines, cyanides,  
oxidizing materials, reducing agents

CHLOROACETIC ACID:

ALCOHOLS: Incompatible.  
ALKALIES: Incompatible.  
ALUMINUM: May produce flammable hydrogen gas.  
AMINES: Incompatible.  
AMMONIA: Incompatible.  
BASES: Violent, exothermic reaction.  
CYANIDES: Incompatible.  
METALS: Corrosive in presence of moisture.  
OXIDIZERS (STRONG): Fire and explosion hazard.  
REDUCING AGENTS (STRONG): Incompatible.  
SULFIDES: Incompatible.  
ZINC: May produce flammable hydrogen gas.

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: phosgene, halogenated compounds, oxides of  
carbon

POLYMERIZATION: Will not polymerize.

## SECTION 11 TOXICOLOGICAL INFORMATION

## CHLOROACETIC ACID:

## TOXICITY DATA:

100-250 mg/kg skin-guinea pig LD50 (Kodak); 140 mg/kg oral-rat LD50 (Kodak); 55 mg/kg oral-rat LD50; 180 mg/m<sup>3</sup> inhalation-rat LC50; 16600 ug/kg intraperitoneal-rat LD50; 5 mg/kg subcutaneous-rat LD50; 250 mg/kg subcutaneous-mouse LD50; 9750 mg/kg/13 week(s) intermittent oral-rat TDLo; 20800 ug/m<sup>3</sup>/17 week(s) intermittent inhalation-rat TCLo; 13 gm/kg/13 week(s) intermittent oral-mouse TDLo; 3840 mg/kg/16 day(s) intermittent oral-mouse TDLo; 20800 ug/m<sup>3</sup>/17 week(s) intermittent inhalation-guinea pig TCLo

## LOCAL EFFECTS:

Corrosive: inhalation, skin, eye, ingestion

## ACUTE TOXICITY LEVEL:

Highly Toxic: inhalation

Toxic: dermal absorption, ingestion

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: eye disorders, kidney disorders, liver disorders, respiratory disorders, skin disorders and allergies

## TUMORIGENIC DATA:

100 mg/kg subcutaneous-mouse TDLo; 1300 mg/kg subcutaneous-mouse TD/65 week(s) intermittent

## MUTAGENIC DATA:

mutation in microorganisms - mouse lymphocyte 548 mg/L (+S9); mutation in mammalian somatic cells - mouse lymphocyte 400 mg/L; sister chromatid exchange - hamster ovary 160 mg/L

## HEALTH EFFECTS:

## INHALATION:

CHLORACETIC ACID: See information on corrosive substances.

## ACUTE EXPOSURE:

CORROSIVE SUBSTANCES: May cause severe irritation of the respiratory tract with coughing, choking, pain and possibly burns of the mucous membranes. In some cases, pulmonary edema may develop, either immediately or more often within a period of 5-72 hours. The symptoms may include tightness in the chest, dyspnea, frothy sputum, cyanosis, and dizziness. Physical findings may include moist rales, low blood pressure and high pulse pressure. Severe cases may be fatal.

## CHRONIC EXPOSURE:

CORROSIVE SUBSTANCES: Depending on the concentration and duration of exposure, repeated or prolonged exposure may cause inflammatory and ulcerative changes in the mouth and possibly bronchial and gastrointestinal disturbances.

## SKIN CONTACT:

CHLORACETIC ACID: See information on corrosive substances. Found to be non-sensitizing when tested on guinea pig skin. Occupational exposure produced nausea and vomiting, tachycardia, hypokalemia, and occasional premature ventricular contractions, and in one case death despite immediate showering. A human fatality has resulted from contact over 10% of body surface with the molten form of the material. Three percent body coverage was lethal in animal testing.

ACUTE EXPOSURE:

CORROSIVE SUBSTANCES: Direct contact may cause severe irritation, pain and possibly burns.

CHRONIC EXPOSURE:

CORROSIVE SUBSTANCES: Effects depend on concentration and duration of exposure. Repeated or prolonged contact may result in dermatitis or effects similar to acute exposure.

EYE CONTACT:

CHLORACETIC ACID: See information on corrosive substances.

ACUTE EXPOSURE:

CORROSIVE SUBSTANCES: Direct contact may cause severe irritation, pain and burns, possibly severe. The degree of injury depends on the concentration and duration of contact. The full extent of the injury may not be immediately apparent.

CHRONIC EXPOSURE:

CORROSIVE SUBSTANCES: Effects depend on concentration and duration of exposure. Repeated or prolonged contact may result in conjunctivitis or effects as in acute exposure.

INGESTION:

CHLORACETIC ACID: See information on corrosive substances. Administration to animals produced inflammatory lesions of the nasal mucosa, metaplasia of the olfactory epithelium, and squamous cell hyperplasia of the forestomach. In a separate gavage study, when administered to animals there was an increase in the relative liver and kidney weights and an increase in the incidence and severity of cardiomyopathy. The no-observable-effect-level was estimated as 30 mg/kg for rats and 100 mg/kg for mice.

ACUTE EXPOSURE:

CORROSIVE SUBSTANCES: May cause immediate pain and severe burns of the mucous membranes. There may be discoloration of the tissues. Swallowing and speech may be difficult at first and then almost impossible. The effects on the esophagus and gastrointestinal tract may range from irritation to severe corrosion. Edema of the epiglottis and shock may occur.

## CHRONIC EXPOSURE:

CORROSIVE SUBSTANCES: Depending on the concentration, repeated ingestion may cause effects as with acute ingestion.

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SECTION 12 ECOLOGICAL INFORMATION  
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## ECOTOXICITY DATA:

FISH TOXICITY: 5000 ug/L 24 week(s) (Stress) Sea lamprey (Petromyzon marinus)

INVERTEBRATE TOXICITY: 77000 ug/L 48 hour(s) EC50 (Immobilization) Water flea (Daphnia magna)

ALGAL TOXICITY: 70 ug/L 48 hour(s) EC50 (Growth) Green algae (Scenedesmus subspicatus)

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SECTION 13 DISPOSAL CONSIDERATIONS  
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Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D002. Dispose in accordance with all applicable regulations.

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SECTION 14 TRANSPORT INFORMATION  
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## U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Chloroacetic acid, solid

ID NUMBER: UN1751

HAZARD CLASS OR DIVISION: 6.1

PACKING GROUP: II

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: No classification assigned.

## LAND TRANSPORT ADR/RID:

PROPER SHIPPING NAME: Chloroacetic acid, solid

UN NUMBER: UN1751

ADR/RID CLASS: 6.1

CLASSIFICATION CODE: TC2

PACKING GROUP: II

## AIR TRANSPORT IATA/ICAO:

PROPER SHIPPING NAME: Chloroacetic acid, solid

UN/ID NUMBER: UN1751

IATA/ICAO CLASS: 6.1

PACKING GROUP: II

MARITIME TRANSPORT IMDG:

PROPER SHIPPING NAME: Chloroacetic acid, solid

UN NUMBER: UN1751

IMDG CLASS: 6.1

PACKING GROUP: II

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SECTION 15 REGULATORY INFORMATION  
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U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

CHLOROACETIC ACID: 100 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):

CHLOROACETIC ACID: 100/10000 LBS TPQ

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):

CHLOROACETIC ACID: 100 LBS RQ

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: Yes

CHRONIC: Yes

FIRE: No

REACTIVE: No

SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65):

CHLOROACETIC ACID

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:

California Proposition 65: Not regulated.

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: Not determined.

EUROPEAN REGULATIONS:

EC CLASSIFICATION (ASSIGNED):

T Toxic

C Corrosive

N Dangerous for the Environment

EC Classification may be inconsistent with independently-researched data.

## DANGER/HAZARD SYMBOL:

T Toxic  
N Dangerous for the Environment

## EC RISK AND SAFETY PHRASES:

R 25 Toxic if swallowed.  
R 34 Causes burns.  
R 50 Very toxic to aquatic organisms.

S 1/2 Keep locked-up and out of reach of children.  
S 23 Do not breathe gas, fumes, vapor, or spray.  
S 37 Wear suitable gloves.  
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

## GERMAN REGULATIONS:

WATER HAZARD CLASS (WGK):

STATE OF CLASSIFICATION: VwVwS

CLASSIFICATION UNDER HAZARD TO WATER: 2

## NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

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SECTION 16 OTHER INFORMATION  
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